Biopharmaceutics and Pharmacokinetics

Objectives:

The course identifies relationship between physiochemical properties of drug in a dosage form and the clinical response observed after administration. It describes and characterizes the time course of drug absorption, distribution, metabolism and excretion as well as the relation between these processes and intensity and time course of therapeutic and adverse effect of the drug. Biopharmaceutics of prolonged–release medication, the pharmacokinetics variability due to different factors, and individualization and optimization of drug dosing regimens.

Contents:

Introduction to biopharmaceutics and pharmacokinetics, non-compartmental pharmacokinetics, gastrointestinal absorption (physicochemical & biological consideration), gastrointestinal absorption (role of dosage form), non-oral medication, bioavailability, drug concentration and clinical response and drug disposition (distribution & elimination). Prolonged release medications, pharmacokinetic variability due to different factors (body weight, age, sex, genetic factors, disease, drug interaction), and covers Principal of individualization and optimization of drug dosing regimens, methods of assessing bioavailability (plasma, urine and clinical response) and bioequivalence studies.

Principal Text:

- **Biopharmaceutics and Clinical Pharmacokinetics, Ed., Milo Gibaldi, Lea & Febiger; 4th edition (September 1990)**

Supplementary Text:

- **Applied Biopharmaceutics and Pharmacokinetics, Ed., Leon Shargel and Andrew B.C.Yu, McGraw-Hill, 4th Ed.**